

REMARKS

Claims 26-37 are pending in the present application. Claims 26 and 30 are amended. Claims 32-37 are added. Reconsideration of the claims is respectfully requested.

I. 35 U.S.C. § 102, Anticipation

The Office Action rejects claims 26-29 under 35 U.S.C. § 102 as being anticipated by *Batchelder*, US Patent 5,472,502. This rejection is respectfully traversed.

As to claims 26-29, the Office Action states:

Batchelder teaches a housing 1102A, 1102B that opens to allow a substrate to pass into the chamber; a rotating chuck 306-11 for holding and spinning the substrate; a movable dispersing head 310A to deposit a precursor on the substrate; and a filter unit (showerhead) 312C. The showerhead is connected to a catalyst source 316, and contains a dispersion head (back and sides of showerhead 312C), and a filter (showerhead plate) that together uniformly distributes the catalyst. (Figures 9, 11A and 11B, and column 9 line 17 through column 10 line 35)

Office Action, dated March 13, 2003. Applicant respectfully disagrees. *Batchelder* teaches an apparatus and method for spin coating wafers and the like. More specifically, *Batchelder* teaches a housing 1102A; a chuck 306-11 located within the housing, wherein the chuck is configured to hold the substrate for processing and wherein the substrate may be spun using the chuck; an inlet 310A within the housing, wherein the inlet is configured for connection to a source; and a dispenser 312C, wherein the dispenser is configured to receive a solvent and introduce the solvent into the housing.

Claim 26, as amended, recites:

26. An apparatus comprising:
- a housing;
 - an opening in the housing configured to pass a substrate into the housing;
 - a chuck located within the housing, wherein the chuck is configured to hold the substrate for processing and wherein the substrate may be spun using the chuck;
 - an inlet within the housing, wherein the inlet is configured for connection to a source for a precursor silica solution and wherein the inlet

is configured to deposit the precursor silica solution onto the substrate held by the chuck and wherein a film of the precursor solution may be formed on the substrate; and

a vapor dispense head, **wherein the vapor dispense head is configured to receive a catalyst** and introduce the catalyst onto the wafer in a uniform manner such that the catalyst becomes homogeneously diffused into the film and forms pores in the film, and

wherein the vapor dispense head is configured to receive a gas mixture and introduce the gas mixture into the housing during a drying phase to maintain capillary pressure within the pores formed in the film. [emphasis added]

Batchelder fails to teach or suggest a vapor dispense head that is configured to receive and introduce a catalyst to form pores in the film and to receive and introduce a gas mixture to maintain capillary pressure in the pores, as recited in claim 26.

Since claims 27-37 depend from claim 26, the same distinctions between *Batchelder* and the invention recited in claim 26 apply for these claims. Additionally, new claims 32-37 recite other additional combinations of features not suggested by the reference. Consequently, it is respectfully urged that the rejection of claims 26-31 is overcome.

The Office Action rejects claims 26-29 under 35 U.S.C. § 102 as being anticipated by *Mandal et al.*, US Patent 5,670,210. This rejection is respectfully traversed.

As to claims 26-29, the Office Action states:

Mandal et al teaches a housing 14 that includes an opening to allow a substrate to pass into the chamber; a rotating chuck 12 for holding and spinning the substrate; a dispersing head 54 to deposit a precursor on the substrate; and a filter unit (showerhead) 20. The showerhead is connected to a catalyst source 34, and contains a dispersion head (back and sides of showerhead 20), and a filter (showerhead plate) that together uniformly distributes the catalyst. (Figures 1 and 2, and throughout the specification)

The examiner notes that the specific substrates supplied to an apparatus, and the specific substrate processed in an apparatus is an intended use of the apparatus. Both *Batchelder* and *Mandal et al* are inherently capable of delivering any substance (solvent or catalyst) to the showerhead, which evenly distributes the substance over the substrate. Likewise, both apparatus can be used to process substrates for an integrated circuit or a chemical sensor (or any other device).

Office Action, dated March 13, 2003. Applicant respectfully disagrees. *Mandal* teaches an apparatus and method for uniformly coating a substrate. More specifically, *Mandal* teaches a housing 14; a chuck 12 located within the housing, wherein the chuck is configured to hold the substrate for processing and wherein the substrate may be spun using the chuck; an inlet 54 within the housing, wherein the inlet is configured for connection to a source; and a dispenser 20, wherein the dispenser is configured to receive a solvent and introduce the solvent into the housing. However, *Mandal* also fails to teach or suggest a vapor dispense head that is configured to receive and introduce a catalyst to form pores in the film and to receive and introduce a gas mixture to maintain capillary pressure in the pores, as recited in claim 26.

Since claims 27-37 depend from claim 26, the same distinctions between *Mandal* and the invention recited in claim 26 apply for these claims. Additionally, claims 27-37 recite other additional combinations of features not suggested by the reference. Consequently, it is respectfully urged that the rejection of claims 26-37 is overcome.

Therefore, the rejections of claims 26-29 under 35 U.S.C. § 102 are overcome.

Furthermore, *Batchelder* and *Mandal* do not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. Absent the Office Action pointing out some teaching or incentive to modify the apparatus of *Batchelder* and/or *Mandal* to be configured to introduce a catalyst for forming pores within the film and to introduce a gas mixture to maintain capillary pressure within the pores, one of ordinary skill in the art would not be led to modify the applied references to reach the present invention when the reference is examined as a whole. Absent some teaching, suggestion, or incentive to modify the applied prior art in this manner, the presently claimed invention can be reached only through an improper use of hindsight using Applicant's disclosure as a template to make the necessary changes to reach the claimed invention.

II. 35 U.S.C. § 103, Obviousness

The Office Action rejects claims 30 and 31 under 35 U.S.C. § 103 as being unpatentable over *Mandal* or *Batchelder* in view of *Santini*, US Patent 4,696,729. This rejection is respectfully traversed.

Santini teaches a showerhead that is made out of a perforated plate and an equivalent embodiment in which the showerhead is a polytetrafluoroethylene screen. As stated above, *Mandal* and *Batchelder* fail to teach or suggest a vapor dispense head that is configured to receive and introduce a catalyst to form pores in the film and to receive and introduce a gas mixture to maintain capillary pressure in the pores. *Santini* does not make up for the deficiencies of the primary references. Since the applied references, taken alone or in combination, fail to teach or suggest each and every claim limitation, the combination of *Mandal/Batchelder* and *Santini* does not render the claimed invention obvious.

Therefore, the rejection of claims 30 and 31 under 35 U.S.C. § 103 is overcome.

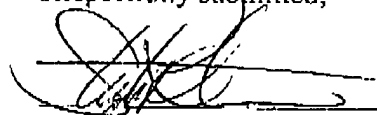
III. Conclusion

It is respectfully urged that the subject application is patentable over the prior art of record and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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